WHAT IS CLAIMED IS:

1. A profile producing method of producing a profile representative of an association between a first color data representative of coordinates on a device- dependence color space dependent on a device mediating between image data including color data and a color image, and a second color data representative of coordinates on a common color space independent of devices, said profile producing method comprising:

a color association definition obtaining step of obtaining a color association definition defining an association between the first color data representative of coordinates on the device-dependence color space and the second color data representative of coordinates on the common color space; and

a profile producing step of producing a profile defining an association between the first color data representative of coordinates on the device-dependence color space and smoothed second color data representative of coordinates on the common color space, in accordance with the color association definition obtained in said color association definition obtaining step, via a smoothing step of smoothing the second color data representative of coordinates on the common color space to the first color data representative of coordinates on the device-dependence color space.

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2. A profile producing method according to claim 1, wherein said color association definition obtaining step comprises:

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a color chart producing step of causing an output device to output a color chart composed of a plurality of color patches associated with a plurality of first color data; and

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a color chart colorimetry step of measuring a plurality of color patches constituting the color chart obtained in said color chart producing step to determine the second color data for the color patches,

wherein the color association definition is obtained through said color chart producing step and said color chart colorimetry step.

3. A profile producing method according to claim 1, wherein said profile producing step comprises:

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a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step to determine a new color association

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CMYK

definition defining an association between the first color data and smoothed second color data; and

a profile construction step of constructing a profile in accordance with the new color association

definition obtained in said smoothing step, the profile
consisting of pairs of the first color data and the second
color data mutually associated, which are more than the

5 number of pairs of the mutually associated first color data
and the smoothed second color data, constituting the new _CMYK_.
color association definition.

interpolation

4. A profile producing method according to claim
1, wherein said profile producing step comprises:
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10 a color association definition reconstruction step
of producing a new color association definition in
accordance with the color association definition obtained
in said color association definition obtaining step, said
new color association definition consisting of/pairs ,of the

15 first color data and the second color data, which are more
than the number of pairs of the mutually associated first
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color data and the second color data, constituting the
color association definition, and which are equal in number
to pairs of the mutually associated first color data and

20 the second color data, constituting the finally produced
profile; and
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a smoothing step of smoothing the second color
data to the first color data using the first color data and
the second color data constituting the color association

25 definition obtained in said color association definition
obtaining step,
whereby said profile producing step produces a

profile defining an association between the first color data and smoothed second color data.

5. A profile producing method according to claim 1, wherein said color association definition obtaining step is a step of obtaining a color association definition consisting of pairs of the first color data and the second color data, which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile; and

said profile producing step is a step of producing a profile defining an association between the first color data and smoothed second color data via a smoothing step of smoothing the second color data to the first color data using the first color data and the second color data constituting the color association definition obtained in said color association definition obtaining step.

6. A profile producing method according to claim 1, wherein said smoothing step is a step of performing a smoothing on a partial area on a color space.

7. A profile producing method according to claim 6, wherein said smoothing step is a step of performing a smoothing on a high density area on a color space.

8. A profile producing apparatus for producing a

profile representative of an association between a first
color data representative of coordinates on a device-
dependence color space dependent on a device mediating
between image data including color data and a color image,
and a second color data representative of coordinates on a
common color space independent of devices, said profile
producing apparatus comprising:

a color association definition obtaining section
for obtaining a color association definition defining an
association between the first color data representative of
coordinates on the device-dependence color space and the
second color data representative of coordinates on the
common color space; and

a profile producing section for producing a
profile defining an association between the first color
data representative of coordinates on the device-dependence
color space and smoothed second color data representative
of coordinates on the common color space, in accordance
with the color association definition obtained in said
color association definition obtaining section, said
profile producing section including a smoothing processing
section for smoothing the second color data representative
of coordinates on the common color space to the first color
data representative of coordinates on the device-dependence
color space.

9. A profile producing apparatus according to

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claim 8, wherein said smoothing processing section receives the color association definition obtained in said color association definition obtaining section, and smoothes the second color data constituting the color association

5   definition to the first color data constituting the color association definition to produce a new color association definition defining an association between the first color data and smoothed second color data, and

said profile producing section further comprises

10   in addition to said smoothing processing section a profile construction section for constructing a profile in accordance with the new color association definition obtained in said smoothing processing section, the profile consisting of pairs of the first color data and the second

15   color data mutually associated, which are more than the number of pairs of the mutually associated first color data and the smoothed second color data, constituting the new color association definition.

20   10.   A profile producing apparatus according to claim 8, wherein said profile producing section comprises

a color association definition reconstruction section for producing a new color association definition in accordance with the color association definition obtained

25   in said color association definition obtaining section, said new color association definition consisting of pairs of the first color data and the second color data, which

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are more than the number of pairs of the mutually associated first color data and the second color data, constituting the color association definition, and which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile, and wherein

said smoothing processing section receives the new color association definition obtained in said color association definition obtaining section, and smoothes the second color data constituting the new color association definition to the first color data constituting the new color association definition obtained in said color association definition obtaining section, thereby producing a profile defining an association between the first color data and smoothed second color data.

11. A profile producing apparatus according to claim 8, wherein said color association definition obtaining section obtains a color association definition consisting of pairs of the first color data and the second color data, which are equal in number to pairs of the mutually associated first color data and the second color data, constituting the finally produced profile, and

said profile producing section produces a profile defining an association between the first color data and smoothed second color data in such a manner that the color association definition obtained in said color association

definition obtaining section is fed to said smoothing

processing section to smooth the second color data

constituting the color association definition to the first

color data constituting the color association definition

5   obtained.

     12.   A profile producing apparatus according to

claim 8, wherein said smoothing processing section performs

a smoothing on a partial area on a color space.

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     13.   A profile producing apparatus according to

claim 12, wherein said smoothing processing section

performs a smoothing on a high density area on a color

space.

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     14.   A profile producing apparatus according to

claim 8, wherein said profile producing apparatus further

comprises a handler for designating an area to be subjected

to the smoothing processing, and said smoothing processing

20   section performs a smoothing on an area designated in

accordance with an operation of said handler.

     15.   A profile producing apparatus according to

claim 8, wherein said profile producing apparatus further

25   comprises an area display section for displaying an area

for which a smoothing processing is necessary.